JESSOP & COOK
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Sustainability Statement

for

Grade II listed barn conversion

at

Lords Farm
2 Queen Street
Eynsham
OX29 4HQ

September 2023
Ref: P.1354/SS

SUMMARY

This Sustainability Statement has been prepared to support the Full Planning and Listed Building Consent applications for the internal and external alterations to convert the existing barn and stables at Lords Farm, 2 Queen Street, Eynsham into a two-bedroom dwelling with single storey link extension and associated private amenity space.

SUSTAINABILITY STATEMENT[1]

Net Zero Carbon

Energy Demand
The fabric has been designed to achieve the lowest energy demand possible without causing long lasting impact to the solid masonry built-up (i.e., interstitial condensation) of the walls and the timber elements forming the roof structure. It is proposed to insulate the walls and roof using woodfibre insulation, the floor with foam glass aggregate, and existing windows to be fitted with secondary glazing units.
The proposed link to the barn and stables buildings is proposed to meet current building regulations standards, alongside with internal insulation of the stone boundary wall using woodfibre insulation.

Comfort and risk of overheating
All the new glazing proposed is on the rear side of the barn, and are mainly on the east and south elevations, due to the massing of the building and requirements to minimise the impact on the barn itself and the Eynsham Conservation Area. All proposed glazed areas to be low emissivity glazing to minimize heat gains.

Use of fossil fuel
The development is proposed to be fully electric, with an electric boiler.

Net Zero Operational Carbon
No provision of renewable energy on site, due to the listed nature of the building, the size of the plot and its location within a conservation area.

Embodied Carbon
The existing structure is to be reused and all new materials imported on site are to be low in embodied carbon (i.e., responsibly source timber, woodfibre insulation, limecrete).

Travel

Home working
The design allows for a second bedroom, which could be used as an office/working space. Alternatively, the ground floor area in the stables could be fitted to allow for a small desk space.

Active Travel
The design encourages the use of active travel, as it is located close to main bus routes and provides secure bike storage. Available parking is only on road.

[1] Based on the Sustainability Standards Checklist issue by West Oxfordshire District Council and dated 26 May 2023.

Other

Heritage Impact
The design of the conversion considered the significance of the building, and a full heritage statement and impact assessment was provided. Detailing at further stages will aim to enhance existing details such as the hay manger, loft hatches, exposed roof structure, windows, exposed stone walls.

Whole building approach
The design of the new residence is following a whole building approach.
To provide a comfortable building the design is allowing for repairs to the masonry and timberwork before starting improvements to the fabric. These repairs include removal of cement-based pointing, repointing of the masonry, fixing of cracks and, replacement of decayed structural timber elements.
Following the preparation of the existing structure, fabric improvements will be carried out to provide an envelope which will significantly reduce the demand for energy for heating and cooling. The new envelope will include woodfibre insulation and limecrete flooring to minimise impact to the existing fabric.

Retrofit measures
First the design is allowing for the repair of the existing structure, without which fixing of new insulation and any works relating to the conversion are not possible. Following that the improvements of the existing fabric will use materials that are appropriate for the existing solid masonry – which are breathable -, i.e. woodfibre insulation boards to a thickness that will not cause interstitial condensation, use of limecrete flooring with foam glass insulation and built-in underfloor heating (to minimise impact to the existing masonry walls and minimise elements of heating along the walls), insulation of the roof using woodfibre insulation between and below rafters, new conservation rooflights, secondary glazing, ventilation system to guarantee healthy indoor air.
Design details will also include junctions with windows, doors, roofs, and floors to minimise the risk of cold bridges and the risk of condensation.